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## ***Lithoserix williamsi* (Siricidae: Hymenoptera) a newly recognized fossil horntail from Florissant, Colorado**

F. Martin Brown

*University of Colorado Museum*

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## Lithoserix williamsi (Siricidae: Hymenoptera) a newly recognized fossil horntail from Florissant, Colorado.

F. Martin Brown  
Research Associate  
University of Colorado Museum

A recently found fossil from the old Scudder pit (?) appears to be a large female horntail. It shows the ventral aspect. Compared with modern Siricidae, the length of its ovipositor in relation to the body proper suggests modern *Xeris spectrum*. Unfortunately the venation is incompletely preserved on both wings. In addition to this the forewings and hindwings overlap to some extent on each side. What venation is decipherable is consistent with that of the family as can be seen in the two sketches. It does not seem to agree with any of the modern genera examined but approaches that of *Sirex* more closely than any other. Both antennae are faintly indicated. They are stout, many-segmented and in keeping with those of Siricidae. Both hind legs are preserved faintly almost throughout their length. They are stout, and the individual segments are clearly defined.

The total body length, omitting the ovipositor, is 22 mm divided as follows: head 1 mm, prothorax 3 mm, mesothorax 3.5 mm, metathorax 2.5, abdomen 12 mm. The greatest width of the body is at the mesothorax, 4.3 mm, but the dimension is not trustworthy because the insect is somewhat crushed. 4.3 and 4.5 mm of the left and right antennae are preserved. The width is 0.4 mm. A segment or two is well enough preserved to suggest that the segments are about half again as long as wide. The thoracic segments suggest that the insect is on its back. There are very small finely striate sublateral areas, and there appear to be medial and medio-lateral grooves. The latter may be an artifact of fossilization, folds instead of grooves. The abdominal segments, five in all, appear transversely banded dark and light. The dark bands probably are the remains of heavy chiton, the light ones more delicate chiton connecting the somites.

The ovipositor is incomplete, 18.4 mm of it are preserved. The characteristic terminal tab of the Siricid abdomen is very dark - composed of heavy chiton - and measures 3.8 mm wide anteriorly and 2 mm long. The ovipositor tapers from basal 0.6 mm to 0.4 mm at its distal end. It has a thin midline groove, clearly visible only in the abdominal portion.

The hind leg is at least 15 mm long. The following measurements of the parts could be made: coxa 0.9? x 0.6 mm, trochanter 0.3 x 0.6 mm, femur 3.5 x 1.1 mm, tibia ca. 5 x 0.7 mm, tarsus 6 x 0.3 mm (individual joints not well enough defined to measure). A trace of the foot appears to be visible on the right side but too poorly preserved to warrant description.

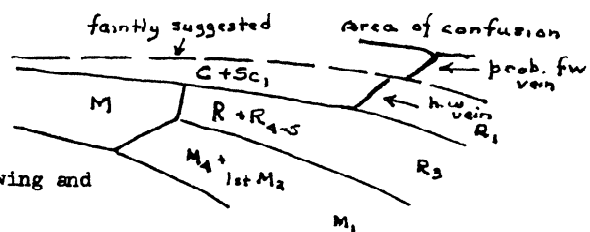
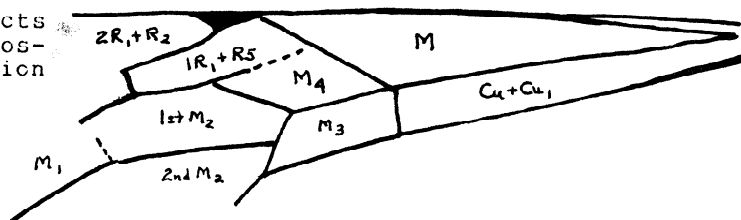
The diagram of the left wing omits the venation of the hind wing which is confused with that of the anal margin of the forewing. About 15 mm of the wing's length is preserved. The wing tip is not preserved. There is a small but well defined dark stigma. The median cell is large, measuring about 7 mm along the costal margin and 1.3 mm at its greatest depth. It is a scalene triangle in shape. Cell  $Cu+Cu_1$  is subrectangular and measures about 5.3 mm long x 1.0 mm at its widest point. Distad of this and continuing the direction of the veins is cell M3, 2.9 x 1.1 mm in greatest dimensions. Between cell M3 and the stigma cells M4 and  $1R_1+R5$  are not clearly separated. The vein M (or  $M_{1+2}$ ) cannot be seen in its entirety. The missing portion is represented by short dashes in the diagram. The cross vein separating 1st M2 cell from M1 cell is ill-defined, and only the posterior half of it can be traced.

A large flake of shale carried off most of the critical venation of the right forewing. More of the hind wing can be deciphered on this side than on the left. At that only part of the anterior portion of the wing is represented by well-defined veins. Only that part of the venation involving the distal portion of the median cell and a portion of the wing apicad of that is clear enough in the fossil to allow study. Most of the cross veins are not visible. The fore and hind wings overlap, and in the drawing the forewing veins have been omitted.

The portion of the left forewing venation that is visible is sufficiently different from that of any other Siricoidea and from either of the fossil Siricids described by Cockerell and by Rohwer to warrant a new generic name as well as a distinctive trivial name. The descriptions above and the drawings may be taken as description of both genus and species, *Lithoserix williamsi* n.gen and n.sp. The provenience of the fossil is Florissant Lake Shales, early Oligocene, Florissant, Teller Co., Colorado. It is the property of the National Park Service, Florissant Fossil Beds National Monument. Following regulations, it is deposited in the type collection of the University Museum, University of Colorado, Boulder, where so many Florissant fossils are preserved.

The generic name, *Lithoserix*, is a creation of convenience based on *lithos* a transliteration of the Greek word for stone and *Serix* the basic genus of the family to which I assigned the fossil. The trivial name, *williamsi*, commemorates Jack Williams, the retired superintendent of the monument who eight years ago asked me to make a detailed

study of both the modern and fossil insects of the area. The initial number of the fossil is FLFO 119 in the monument collection and now carries the UCM number 31179.



"Lithoserix williamsi, n.sp., diagram of venation of left forewing and right hind wing."